

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for classifying defects comprising:
imaging an inspected object;
extracting an image of a defect candidate from an image obtained by said imaging
step;
classifying said extracted defect candidate image into a first category;
classifying said extracted defect candidate image into a second category; and
displaying on a screen said extracted defect candidate image and information
relating to said classification into said first category and information relating to said
classification into said second category,

wherein said step of classifying said extracted defect candidate image into said
second category is performed by comparing a circuit pattern area and a defect area, said circuit
pattern area being obtained from a reference image and said defect area being obtained from said
imaging step.

2. (Original) The method for classifying defects as described in claim 1
wherein said imaging of said inspected object is performed by illuminating and scanning an
electron beam focused on said inspected object and detecting, in synchronization with said
scanning, secondary electrons generated from said inspected object by said illumination.

3. (Original) The method for classifying defects as described in claim 1
wherein said first category relates to defect criticality.

4. (Original) The method for classifying defects as described in claim 3
wherein said second category relates to defect type.

5. (Original) The method for classifying defects as described in claim 4
wherein said defect type includes one or more of the following: particle defects, flaw defects,
circuit pattern short defects, and circuit pattern open defects.

6. (Currently Amended) A method for classifying defects comprising:
imaging an inspected object to obtain an image;

extracting an image of a defect candidate from said image obtained by said imaging step;
classifying said extracted defect candidate image into at least one defect type;
evaluating criticality of defect of said defect candidate image classified into said at least one defect type; and

displaying on a screen said defect candidate image along with information relating to the type of said at least defect type and said criticality of defect,

wherein said evaluating step is performed by comparing a circuit pattern area and a defect area, said circuit pattern area being obtained from a reference image, said defect area being derived from said imaging step, said extracted defect candidate image being extracted from said defect area.

7. (Original) The method for classifying defects as described in claim 6 wherein said imaging of said inspected object is performed by illuminating and scanning an electron beam focused on said inspected object and detecting, in synchronization with said scanning, secondary electrons generated from said inspected object by said illumination.

8. (Original) The method for classifying defects as described in claim 6 wherein said defect types for classification include one or more of the following: particle defects, flaw defects, circuit pattern short defects, and circuit pattern open defects.

9. (Currently Amended) A method for classifying defects comprising:
imaging an inspected object;
extracting images of defect candidates from said inspected object;
classifying said extracted defect candidate images into a first category;
classifying said extracted defect candidate images into a second category, said second category relating to a predicted yield from said inspected object; and
displaying on a single screen a distribution on said inspected object of said defect candidates classified in said first category and information relating to said first category classification and information relating to results of said second category classification,

wherein said step of classifying said extracted defect candidate image into said second category is performed by comparing a circuit pattern area and a defect area, said circuit

pattern area being obtained from a reference image and corresponding to said defect area on said reference image, said defect area being derived from said imaging step, said extracted defect candidate image being extracted from said defect area.

10. (Original) The method for classifying defects as described in claim 9 wherein said imaging of said inspected object is performed by illuminating and scanning an electron beam focused on said inspected object and detecting, in synchronization with said scanning, secondary electrons generated from said inspected object by said illumination.

11. (Original) The method for classifying defects as described in claim 9 wherein an image of said defect candidate is also displayed on said screen.

23. (Previously Added) The method for classifying defects as described in claim 2 further comprising forming an image based on said secondary electrons generated from said inspected object by said illumination.

24. (Previously Added) The method for classifying defects as described in claim 7 further comprising forming an image based on said secondary electrons generated from said inspected object by said illumination.

25. (Previously Added) The method for classifying defects as described in claim 10 further comprising forming an image based on said secondary electrons generated from said inspected object by said illumination.

26. (Previously Added) The method for classifying defects as described in claim 9 wherein said first category relates to defect type.

27. (Previously Added) The method for classifying defects as described in claim 26 wherein said defect type includes particle defects, flaw defects, circuit pattern defects, and voltage contrast defects.

28. (Previously Added) The method for classifying defects as described in claim 9 wherein said second category relates to defect criticality.

29. (New) A method for classifying defects on a substrate, the method comprising:

imaging a portion of the substrate having a defect candidate to provide an image of the defect candidate;

calculating first information relating to defect surface shape of the defect candidate;

calculating second information relating to pattern defect of the defect candidate;

calculating third information relating to voltage contrast of the defect candidate;

classifying the defect candidate into a defect category using one or more of the first, second, and third information; and

determining whether or not the defect candidate is a killer defect or non-killer defect, the killer defect being a defect that makes the portion of the substrate unusable, the non-killer defect being a defect that does not make the portion of the substrate unusable.

30. (New) A method for classifying defects on a semiconductor wafer, the method comprising:

imaging the wafer to obtain an image of a portion of the wafer, the portion of the wafer including a defect candidate;

defining a defect area by comparing the image of the portion of the wafer and a first reference image;

obtaining a circuit pattern area from a second reference image;

classifying the defect candidate into a first category using an image of the defect candidate obtained from the imaging step; and

classifying the defect candidate into either a killer defect or non-killer defect; and

displaying on a screen the image of the defect candidate and first information relating to the classification into the first category and second information relating to the classification into the killer/non-killer defect category.

31. (New) The method of claim 30, wherein the step of the classifying the defect candidate into either the killer defect or non-killer defect includes comparing the defect area and the circuit pattern area, the first and second reference images being the same. 1123

32. (New) The method of claim 30, wherein the step of the classifying the defect candidate into either the killer defect or non-killer defect includes evaluating an overlap between the defect area and the circuit pattern area.

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